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Production of muons from heavy-quark hadron decays in pp collisions at √s = 13 TeV with the ALICE detector

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Abstract
Heavy quarks (charm and beauty) are produced at an early stage of the collision via hard parton scatterings. In ALICE, heavy quarks are measured in the central barrel (|η|<0.9) which is optimized for the reconstruction ofη|η|<0.9) which is optimized for the reconstruction of<0.9) which is optimized for the reconstruction of) which is optimized for the reconstruction of hadrons, electrons, photons and jets via the hadronic and electronic decay channels, and at forward pseudo rapidity (−4<η<−2.5) with the muon) with the muon spectrometer which is responsible for the reconstruction of muon decay products of heavy quarks, quarkonia and electroweak bosons via the single muon decay channel. The inclusive single muon cross sections from heavy-quark hadron decays, produced at forward rapidity, are measured using muon triggered events from proton-proton (pp)collisions at √s = 13 TeV. The pT and pseudorapidity (η) differential cross sections are presented and compared to perturbative quantum chromodynamics (pQCD) based Fixed Order plus Next-to-Leading Logarithms (FONLL) calculations. These measurements provide a testing ground for pQCD calculations.

Apply to be considered for a student ; award (Yes / No)?

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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